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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,151

04/07/2006

Peter Bruce Darwood

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11/03/2006

MORRISON & FOERSTER LLP
755 PAGE MILL RD
PALO ALTO, CA 94304-1018

EXAMINER

NGUYEN, TUAN HOANG

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/531,151

Applicant(s)

DARWOOD ET AL.

Examiner

Tuan H. Nguyen

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2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 07/19/2005 has been considered by Examiner and made of record in the application file.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 8-11, and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilson et al. (US PAT. 7,027,540 hereinafter, "Wilson").

Consider claims 1 and 8, Wilson teaches channel estimation in a wireless communication system, comprising: correlation channel estimation receiving input signals representative of channel information and for producing therefrom correlation channel estimate signals (see fig. 5 col. 8 lines 16-25); correlation peak identification coupled to the correlation channel estimation deriving from the correlation channel estimate signals representative of correlation peaks (col. 6 lines 37-65); and cross-correlation peak removal coupled to the correlation channel estimation and to the correlation peak identification removing cross-correlation peaks from the correlation channel estimate signals to produce improved channel estimate signals (see fig. 5 col. 8 lines 16-47).

Consider claims 2 and 9, Wilson further teaches the correlation peak identification means comprises cross-correlation peak identification identifying a cross-correlation peak as having a smaller magnitude than a correlation peak (col. 11 lines 4-16).

Consider claims 3 and 10, Wilson further teaches the input signals representative of channel information comprise signal portions constructed from a single periodic base code (col. 1 lines 25-40).

Consider claims 4 and 11, Wilson further teaches the signal portions comprise midambles (col. 14 lines 50-56).

Consider claim 20, Wilson further teaches a base station for use in a wireless communication system comprising an arrangement as claimed in any one of claims 1-7 (col. 1 lines 9-24).

Consider claim 21, Wilson further teaches an integrated circuit comprising the arrangement of any one of claims 1-7 (col. 2 lines 40-44).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-7 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US PAT. 7,027,540 hereinafter, "Wilson") in view of applicant admitted prior art.

Consider claims 5 and 12, Wilson teaches correlation channel estimation receiving input signals representative of channel information and for producing

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therefrom correlation channel estimate signals; correlation peak identification coupled to the correlation channel estimation deriving from the correlation channel estimate signals representative of correlation peaks; and cross-correlation peak removal coupled to the correlation channel estimation and to the correlation peak identification removing cross-correlation peaks from the correlation channel estimate signals to produce improved channel estimate signals.

Wilson does not explicitly show that the wireless communication system is a UMTS system.

In the same field of endeavor, applicant admitted prior art in the specification teaches the wireless communication system is a UMTS system (page 1 lines 16-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, the wireless communication system is a UMTS system, as taught by applicant admitted prior art in the specification, in order to provide a method and an arrangement, for channel estimation in a wireless communication system.

Consider claims 6 and 13, Wilson further teaches the UMTS system is a UTRA TDD system (page 1 lines 16-21).

Consider claims 7 and 14, Wilson further teaches the input signals comprise random access PRACH bursts (page 1 lines 16-21).

7. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US PAT. 7,027,540 hereinafter, "Wilson") in view of Fuchs et al. (US PAT. 6,453,237 hereinafter, "Fuchs").

Consider claim 15, Wilson teaches correlation channel estimation receiving input signals representative of channel information and for producing therefrom correlation channel estimate signals; correlation peak identification coupled to the correlation channel estimation deriving from the correlation channel estimate signals representative of correlation peaks; and cross-correlation peak removal coupled to the correlation channel estimation and to the correlation peak identification removing cross-correlation peaks from the correlation channel estimate signals to produce improved channel estimate signals.

Wilson does not explicitly show that the step of providing cross-correlation peak removal comprises repeatedly cancelling cross-correlation peaks at locations other than that of an identified peak and identifying the next largest magnitude remaining peak.

In the same field of endeavor, Fuchs teaches the step of providing cross-correlation peak removal comprises repeatedly cancelling cross-correlation peaks at locations other than that of an identified peak and identifying the next largest magnitude remaining peak (col. 19 lines 12-22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, the step of providing cross-correlation peak removal comprises repeatedly cancelling cross-correlation peaks at locations other than that of an identified peak and identifying the next largest magnitude remaining peak, as

taught by Fuchs, in order to provide GPS processing elements in the mobile devices include a highly parallel GPS correlator that is capable of searching and detecting signals over a wide range of unknown signal delays.

Consider claim 16, Wilson further teaches the step of repeatedly cancelling and identifying is performed a predetermined number of times (col. 2 line 62 through col. 3 line 4).

Consider claim 17, Wilson further teaches the step of repeatedly cancelling and identifying is performed until an identified peak has a magnitude less than a predetermined value (col. 11 lines 4-16).

8. Claims 18-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US PAT. 7,027,540 hereinafter, "Wilson") in view of Beckmann et al. (US PUB. 2004/0137910 hereinafter, "Beckmann").

Consider claim 18, Wilson teaches correlation channel estimation receiving input signals representative of channel information and for producing therefrom correlation channel estimate signals; correlation peak identification coupled to the correlation channel estimation deriving from the correlation channel estimate signals representative of correlation peaks; and cross-correlation peak removal coupled to the correlation channel estimation and to the correlation peak identification removing cross-correlation

peaks from the correlation channel estimate signals to produce improved channel estimate signals.

Wilson does not explicitly show that ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed.

In the same field of endeavor, Beckmann teaches ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed (see fig. 3 page 5 [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed, as taught by Beckmann, in order to provide the position of at least one subscriber device of a radio communication system which has a number of base stations respectively associated with a number of radio cells, with at least one locating measuring signal being transmitted by at least one additional position element from at least one radio cell.

Consider claim 19, Wilson teaches a method for channel estimation in a wireless communication system, the method comprising: providing correlation channel estimation means receiving input signals representative of channel information and producing therefrom correlation channel estimate signals.

Wilson does not explicitly show that ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed.

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In the same field of endeavor, Beckmann teaches ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed (see fig. 3 page 5 [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, ensuring that no transmission occurs in a timeslot immediately following that in which channel estimation is performed, as taught by Beckmann, in order to provide the position of at least one subscriber device of a radio communication system which has a number of base stations respectively associated with a number of radio cells, with at least one locating measuring signal being transmitted by at least one additional position element from at least one radio cell.

Consider claim 22, Wilson further teaches a computer program element comprising computer program means for performing the method of any one of claims 8-19 (col. 18 lines 50-53).

Conclusion

9. Any response to this action should be mailed to:

Mail Stop_____ (Explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

Customer Service Window

Randolph Building

401 Dulany Street

Alexandria, VA 22313

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571) 272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Nguyen
Examiner
Art Unit 2618

Quochien B. Vuong 10/30/06

QUOCHIEB B. VUONG
PRIMARY EXAMINER